

T01D02 – Limiting Reagent IB Practice

Name.....

1. (a) Write an equation for the formation of zinc iodide from zinc and iodine. (1)

- (b) 100.0 g of zinc is allowed to react with 100.0 g of iodine producing zinc iodide.
Calculate the amount (in moles) of zinc and iodine, and hence determine which reactant is in excess.

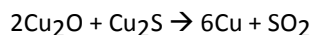
(3)

- (c) Calculate the mass of zinc iodide that will be produced.

(1)

(Total 5 marks)

2. Copper metal may be produced by the reaction of copper(I) oxide and copper(I) sulfide according to the below equation.



A mixture of 10.0 kg of copper(I) oxide and 5.00 kg of copper(I) sulfide was heated until no further reaction occurred.

- (a) Determine the limiting reagent in this reaction, showing your working.

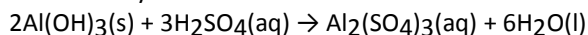
(3)

- (b) Calculate the maximum mass of copper that could be obtained from these masses of reactants.

(2)

(Total 5 marks)

3. 0.600 mol of aluminium hydroxide is mixed with 0.600 mol of sulfuric acid, and the following reaction occurs:



- (a) Determine the limiting reactant.

(2)

- (b) Calculate the mass of $\text{Al}_2(\text{SO}_4)_3$ produced.

(2)

- (c) Determine the amount (in mol) of excess reactant that remains.

(1)

(Total 5 marks)